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Ashish Thusoo

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ORACLE INTERNATIONAL CORPORATION

c/o VISTA IP LAW GROUP LLP

1885 LUNDY AVENUE

SUITE 108

SAN FRANCISCO, CA 95131

EXAMINER

MORRISON, JAY A

ART UNIT

PAPER NUMBER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/656,795 | Applicant(s) THUSOO ET AL. | |
| | Examiner JAY A. MORRISON | Art Unit 2168 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-74 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-74 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remarks

1. Claims 23-74 are pending.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 56-68 and 73-74 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As per claims 56-68 and 73-74, these claims disclose a system but do not describe any hardware, which is required for a system claim to be statutory.

Accordingly, these system claims are rejected as non-statutory for failing to disclose any hardware. It is noted that the claimed processor could be interpreted as a software element which does processing and therefore the claim is non-statutory for not disclosing hardware.

Claim Rejections - 35 USC § 102

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 23-68 are rejected under 35 U.S.C. 102(e) as being anticipated by Wu et al. ('Wu' hereinafter) (Publication Number 2004/0066529).

As per claim 23, Wu teaches

A method of handling document operation requests and storing results of document operations requests in a volatile or non-volatile computer readable medium, the method comprising: (see abstract and background)

receiving a document operation request, the document operation requiring one or more collection elements in a collection within the document to be in a computer-readable memory, wherein the one or more collection elements are designated to be part of the collection with a markup language (document elements, paragraph [0100], lines 1-8; HTML or XML, paragraph [0110], elements are tagged elements, paragraph [0061], lines 1-5);

identifying at least one of the one or more required collection elements for processing (document elements required, paragraph [0100]);

determining whether the at least one identified collection element is in the computer-readable memory (elements in RAM need to be unloaded to make room, paragraph [0100]);

identifying a collection partition associated with the at least one identified collection element, wherein the collection partition comprises a subset of the collection elements in the document, and the subset of collection elements comprises at least one collection element in addition to the at least one identified collection element; (acquiring all display content data of the document element that will fit on a page, paragraph [0100], lines 1-12)

loading the collection element into the computer-readable memory based on a result from the act of determining, where the at least one identified collection element is loaded into the computer-readable memory when the at least one identified collection element is not in the computer-readable memory (reload element, paragraph [0100]-[0103]);

and another collection partition is removed from the computer-readable memory where there is insufficient space for loading the collection partition; (delete document element from memory, paragraph [0044], lines 1-5)

and executing the document operation with the collection partition (print, paragraph [0100]).

As per claim 24, Wu teaches

a collection partition does not exceed a threshold size (paragraph [0067]).

As per claim 25, Wu teaches
the threshold size is a factor of the memory size (paragraph [0079]).

As per claim 26, Wu teaches
the threshold size is user defined (paragraph [0030]).

As per claim 27, Wu teaches
the memory is fixed in size (paragraph [0079]).

As per claim 28, Wu teaches
a collection partition is a unit in which data is written to or read from a data
storage device (paragraph [0100]).

As per claim 29, Wu teaches
a collection partition comprises collection elements from one collection
(paragraph [0101]).

As per claim 30, Wu teaches
a collection partition is a disjoint subset of a collection in the document
(paragraph [0100]).

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As per claim 31, Wu teaches

loading the at least one identified collection element into memory comprises:
loading the at least one identified collection element into a new collection partition in the memory when the at least one identified collection element is not in the memory
(paragraph [0100]).

As per claim 32, Wu teaches

determining whether the memory is full (paragraph [0100]-[0103]);
selecting one or more collection partitions in the memory for removal when the memory is full (paragraph [0100]-[0103]);
propagating one or more changes in each of the one or more selected collection partitions to one or more data storage devices storing one or more collection elements in the selected collection partition (paragraph [0100]-[0103]);
removing the one or more selected collection partitions from the memory
(paragraph [0100]-[0103]);
and updating one or more collection partitions that remain in the memory
(paragraph [0100]-[0103]).

As per claim 33, Wu teaches

the memory is full when the memory is above a threshold (paragraph [0079]).

As per claim 34, Wu teaches

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the threshold is user defined (paragraph [0030]).

As per claim 35, Wu teaches

selecting one or more collection partitions in the memory for removal comprises:
selecting one or more least recently used collection partitions in the memory for removal
when the memory is full (paragraph [0100]).

As per claim 36, Wu teaches

updating one or more collection partitions comprises: updating metadata
corresponding to the one or more collection partitions that remain in the memory
(paragraph [0095]).

As per claim 37, Wu teaches

the one or more selected collection partitions do not contain any of the one or
more required collection elements (paragraph [0100]-[0103]).

As per claim 38, Wu teaches

the document operation is a read, update, delete, insert, or create operation
(paragraph [0100]).

As per claim 39, Wu teaches

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the one or more required collection elements are part of one collection (paragraph [0100]).

As per claim 40, Wu teaches

determining whether the at least one identified collection element is within a collection partition in the memory comprises: determining whether a collection partition corresponding to the at least one identified collection element has already been loaded into memory (paragraph [0100]-[0103]).

As per claim 41, Wu teaches

loading the at least one identified collection element into memory comprises: loading the corresponding collection partition into memory when the corresponding collection partition has not already been loaded into memory (paragraph [0100]-[0103]).

As per claim 42, Wu teaches

the document is an XML document (paragraph [0110]).

As per claims 43 and 56,

These claims are respectively rejected on grounds corresponding to the arguments given above for rejected claim 23 and are similarly rejected.

As per claim 44 and 57,

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These claims are respectively rejected on grounds corresponding to the arguments given above for rejected claim 24 and are similarly rejected.

As per claim 45 and 58,

These claims are respectively rejected on grounds corresponding to the arguments given above for rejected claim 27 and are similarly rejected.

As per claim 46 and 59,

These claims are respectively rejected on grounds corresponding to the arguments given above for rejected claim 28 and are similarly rejected.

As per claim 47 and 60,

These claims are respectively rejected on grounds corresponding to the arguments given above for rejected claim 30 and are similarly rejected.

As per claim 48 and 61,

These claims are respectively rejected on grounds corresponding to the arguments given above for rejected claim 31 and are similarly rejected.

As per claim 49 and 62,

These claims are respectively rejected on grounds corresponding to the arguments given above for rejected claim 32 and are similarly rejected.

As per claim 50 and 63,

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These claims are respectively rejected on grounds corresponding to the arguments given above for rejected claims 33-34 and are similarly rejected.

As per claim 51 and 64,

These claims are respectively rejected on grounds corresponding to the arguments given above for rejected claim 35 and are similarly rejected.

As per claim 52 and 65,

These claims are respectively rejected on grounds corresponding to the arguments given above for rejected claim 36 and are similarly rejected.

As per claim 53 and 66,

These claims are respectively rejected on grounds corresponding to the arguments given above for rejected claim 38 and are similarly rejected.

As per claim 54 and 67,

These claims are respectively rejected on grounds corresponding to the arguments given above for rejected claim 40 and are similarly rejected.

As per claim 55 and 68,

These claims are respectively rejected on grounds corresponding to the arguments given above for rejected claim 42 and are similarly rejected.

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6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 69, 71 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. ('Wu' hereinafter) (Publication Number 2004/0066529) in view of Gill et al. ('Gill' hereinafter) (Patent Number 6,081,262).

As per claim 69,

Wu does not explicitly indicate “the collection partition is defined by a partitioning function”.

However, Gill discloses “the collection partition is defined by a partitioning function” (column 6, lines 22-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wu and Gill because using the steps of “the collection partition is defined by a partitioning function” would have given those skilled in the art the tools to improve the invention by improving the efficiency of storage by taking advantage of characteristics of data to be stored. This gives the user the advantage of more efficient use of expensive computing resources.

As per claim 71 and 73,

These claims are respectively rejected on grounds corresponding to the arguments given above for rejected claim 69 and are similarly rejected.

8. Claims 70, 72 and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (‘Wu’ hereinafter) (Publication Number 2004/0066529) in view of Gill et al. (‘Gill’ hereinafter) (Patent Number 6,081,262) and further in view of Khalidi et al. (‘Khalidi’ hereinafter) (Patent Number 5,446,854).

As per claim 70,

Neither Wu nor Gill explicitly indicate “the partitioning function comprises a hash-based partitioning function or a range-based partitioning function”.

However, Khalidi discloses “the partitioning function comprises a hash- based partitioning function or a range-based partitioning function” (column 15, line 65 through column 16, line 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wu, Gill and Khalidi because using the steps of “the partitioning function comprises a hash- based partitioning function or a range-based partitioning function” would have given those skilled in the art the tools to improve the invention by reducing memory fragmentation problems. This gives the user the advantage of more efficient use of expensive computing resources.

As per claim 72 and 74,

These claims are respectively rejected on grounds corresponding to the arguments given above for rejected claim 70 and are similarly rejected.

Response to Arguments

9. With regards to Applicant’s argument that Wu does not disclose “the collection partition comprises a subset of the collection elements” because the previously submitted answer to arguments that a subset of a set can be the set itself. Applicant

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further argues that this may be flawed because Wu discloses that there may be multiple pages (paragraph [0044], lines 3-6), however it is noted that there is the possibility that there is only one page and therefore the logic is not flawed. It is therefore respectfully submitted that Wu discloses the limitation.

10. With regards to Applicant's argument that Wu does not disclose "another collection partition is removed from the computer-readable memory where there is insufficient space for loading the collection partition", it is noted that Wu discloses deleting content data of a document element using an LRU scheme (paragraph [0044], lines 1-12). Applicant further argues that only a document element is removed and not the entire page, and that the elements are given a priority for unloading. Respectfully, as previously argued the subset can be the set itself, so removing the element can be equivalent to removing the entire page. With respect to the argument that Wu has a priority for unloading the elements is somehow different then the limitation being argued, it is submitted that the claim reads that "another collection partition is removed" and does not specify how the particular element for removal is determined. Wu uses an LRU arrangement in order to keep elements which have a better chance of being used, but he still removes "another collection partition", which is what is required by the claim language and therefore it is respectfully submitted that Wu teaches the limitation.

Conclusion

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11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record, listed on form PTO-892, and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay A. Morrison whose telephone number is (571) 272-7112. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on (571) 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tim T. Vo/
Supervisory Patent Examiner, Art Unit 2168

Jay Morrison
TC2100

Tim Vo
TC2100